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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,793	11/08/2001	Philip St. John Russell	000035-035	6561
21839	7590	03/25/2004	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			PALMER, PHAN T H	
POST OFFICE BOX 1404			ART UNIT	
ALEXANDRIA, VA 22313-1404			PAPER NUMBER	

2874

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/890,793	Applicant(s) RUSSELL ET AL.	
	Examiner PHAN T.H. PALMER	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001 and 08 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37-43 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-10, 20 and 26-28 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 11-19, 21-25 and 29-36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 August 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Applicant's cooperation is requested in correcting any error of which applicant may become aware in the specification.

***Preliminary Amendment***

2. Preliminary Amendment filed 08/03/2001, and 11/08/2001, have been entered.

***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

4. The information disclosure statement submitted on 11/06/2003, has been considered by the examiner and made of record. See attached form PTO-1449.

***Drawings***

5. Figures 2, and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 5-10, 20, and 26-28 are rejected under 35 U.S.C. 102(b) as being anticipated by DiGiovanni et al. (5,802,236).

The DiGiovanni et al reference discloses in figures 1-5, a non-periodic microstructure optical fibers comprising a bulk material having arrangement of longitudinal holes (or voids) and a guiding core (abstract). It is also known from the DiGiovanni et al reference that non-periodic optical fiber form part of the state-of-the art. "Non-periodic" is understood as "at-most two-fold symmetry" since there is no symmetry at all (see col. 3, lines 45-52).

Moreover, triangular and hexagonal patterns are also known for the arrangement of the voids, as well as the arrangement of a "defect" site, either bulk or hollow filled with liquid, in the core or within the "holey" part of the fiber to induce waveguiding.

With regard to claims 1-2, 5-10, 20, and 26-28, the DiGiovanni et al reference disclosed all the claimed invention.

***Allowable Subject Matter***

7.     +++ Claims 3-4, 11-19, 21-25, and 29-36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The DiGiovanni et al reference does not disclose the limitations of claims 3-4, 11-19, 21-25, and 29-36.

+++ Claims 37-43 are allowed. The claims are allowable over prior of record because the DiGiovanni et al reference does not disclose the method of producing a photonic crystal fiber comprising:

- (a) providing a plurality of elongate canes, each having a longitudinal axis, a first end and a second end, at least some of the canes being capillaries each having a hole parallel to the longitudinal axis of the cane and running from the first end of the cane to the second end of the cane;

- (b) forming the canes into a stack, the canes being arranged with their longitudinal axes substantially parallel to each other and the longitudinal axis of the stack;

- (c) drawing the stack into a fiber whilst maintaining the hole of at least one capillary in communication with a source of fluid at a first pressure whilst maintaining the pressure around the capillary at a second pressure that is different from the first pressure, wherein the hole at the first pressure becomes,

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during the drawing process, a size different from that which it would have become without the pressure difference.


**CONTACT INFORMATION**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHAN T.H. PALMER whose telephone number is (571) 272-2354. The examiner can normally be reached on 4/4 OFF MONDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RODNEY B. BOVERNICK can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PTHP  
03/20/04

  
**PHAN T. H. PALMER**  
**PRIMARY EXAMINER**